



Mineral Industry Surveys

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CHROMIUM IN JULY 2003

On the basis of gross weight, consumption of chromium ferroalloys and metal in July 2003 decreased 10% compared with consumption in June 2003, according to the U.S. Geological Survey.

Included in this Mineral Industry Surveys are U.S. salient chromium statistics, U.S. government stockpile inventory of chromium materials in July 2003, consumption by end use and consumer stocks of chromium ferroalloys and metal at the end of July 2003, and U.S. foreign trade data for selected chromium-containing materials in June 2003.

Update

The Defense National Stockpile Center (DNSC) announced the award of 45,702 kilograms of chromium metal valued at \$148,416 in September under Invitation for Bids DLA-

Chromium metal-002. DLA accepts bids for chromium metal on the fourth Thursday of the month (Defense National Stockpile Center, 2003a).

The DNSC announced the award of 5,770 metric tons (t) of ferrochromium valued at \$3.64 million in September under Basic Ordering Agreement, DLA-Ferrochromium-004. The sale comprised 4,536 t of high-carbon ferrochromium and 1,234 t of low-carbon ferrochromium (Defense National Stockpile Center, 2003b).

References Cited

Defense National Stockpile Center, 2003a, Stockpile accepts chromium metal bids: Defense National Stockpile Center, News Release DNSC-03-2305, September 4, 1 p.

Defense National Stockpile Center, 2003b, Stockpile announces ferrochromium sales or August 2003: Defense National Stockpile Center, News Release DNSC-03-2345, September 5, 1 p.

TABLE 1
U.S. SALIENT CHROMIUM STATISTICS¹

(Metric tons, gross weight)

	2002	2003				
	January- December ²	May	June	Second quarter	July	January- July ²
Production:						
Stainless steel production ³	2,180,000 ⁴	185,000	179,000	570,000	163,000	1,280,000 ⁴
Components of U.S. supply:						
Stainless steel scrap receipts	815,000	64,300	52,500 ^r	191,000	61,100	449,000
Stainless steel scrap consumption	1,190,000	87,100	79,100	267,000	83,700	630,000
Imports for consumption:						
Chromite ore	112,000	3,900	5,240	9,720	NA	71,000 ⁵
Ferrochromium:						
More than 4% carbon	283,000	10,200	32,700	96,100	NA	193,000 ⁵
More than 0.5%, but not more than 3% carbon	8,040	240	56	816	NA	2,430 ⁵
Not more than 0.5% carbon	25,600	1,790	1,760	4,480	NA	10,700 ⁵
Ferrochromium silicon	28,900	4,000	3,600	15,200	NA	18,500 ⁵
Total ferroalloy imports	345,000	16,300	38,100	117,000	NA	225,000 ⁵
Chromium metal ⁶	7,430	1,200	677	2,540	NA	4,730 ⁵
Stainless steel	752,000	53,300	56,900	168,000	NA	329,000 ⁵
Stainless steel scrap	81,000	6,150	5,440	18,700	NA	35,000 ⁵
Distribution of U.S. supply:						
Industry consumer, chromium ferroalloys and metal	384,000	30,300 ^r	30,200 ^r	95,700	27,200	217,000
Exports:						
Chromite ore	24,300	444	1,030	3,380	NA	5,160 ⁵
Chromium ferroalloys:						
High-carbon ferrochromium	13,500	259	569	1,020	NA	1,610 ⁵
Low-carbon ferrochromium	2,070	58	147	388	NA	829 ⁵
Ferrochromium silicon	281	--	40	59	NA	59 ⁵
Total ferroalloy exports	15,900	317	756	1,460	NA	2,500 ⁵
Chromium metal	745	72	46	182	NA	391 ⁵
Stainless steel	273,000	34,200	27,700	89,800	NA	166,000 ⁵
Stainless steel scrap	342,000	31,800	30,700	101,000	NA	278,000 ⁵
Stocks at end of period:						
Industry consumer, Chromium ferroalloys and metal	13,900	32,400	18,900	XX	16,700	XX
Government stockpile:						
Chromite ore	204,000	176,000	155,000	XX	154,000	XX
Chromium ferroalloys	763,000	728,000	723,000	XX	705,000	XX
Chromium metal	7,220	7,160	7,160	XX	7,150	XX

¹Revised. NA Not available. XX Not applicable. -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²May include revised data.

³Data on stainless steel production reported by American Iron and Steel Institute; monthly, quarterly, and year-to-date production of stainless and heat-resisting raw steel.

⁴Includes revised data which are not broken out by specific month.

⁵Includes January through June data; July data not available.

⁶Includes waste and scrap and other.

TABLE 2
U.S. REPORTED CONSUMPTION AND STOCKS OF CHROMIUM PRODUCTS IN 2003¹

(Metric tons, gross weight unless otherwise noted)

	June	July	January- July ²
Consumption by end use:			
Alloy uses:			
Iron alloys:			
Steel:			
Carbon steel	302 ^r	314	2,160
High-strength low-alloy steel	591 ^r	533	3,820
Stainless and heat-resisting steel	25,700 ^r	22,800	187,000
Full alloy steel	1,200	1,270	9,150
Electrical steel	W	W	W
Tool steel	682	494	3,420
Unspecified Steel	W	W	W
Cast irons	W	W	W
Superalloys	730	738	4,740
Other alloys ³	122	82	642
Total	30,200 ^r	27,200	217,000
Total, chromium content	17,600 ^r	16,000	128,000
Consumption by material:			
Low-carbon ferrochromium	1,900 ^r	1,750	12,700
High-carbon ferrochromium	24,700 ^r	22,100	179,000
Ferrochromium silicon	3,050	2,810	22,300
Chromium metal	405 ^r	398	2,410
Chromite ore	W	W	W
Chromium-aluminum alloy	51	31	253
Other chromium materials	W	W	W
Total	30,200 ^r	27,200	217,000
Total, chromium content	17,600 ^r	16,000	128,000
Consumer stocks:			
Low-carbon ferrochromium	1,430 ^r	1,340	XX
High-carbon ferrochromium	W	14,000	XX
Ferrochromium silicon	1,030	1,060	XX
Chromium metal	171 ^r	173	XX
Chromite ore	W	W	XX
Chromium-aluminum alloy	34	41	XX
Other chromium materials	33	W	XX
Total	18,900	16,700	XX
Total, chromium content	11,200	9,970	XX

^rRevised. W Withheld to avoid disclosing company proprietary data; included in "Total." XX Not applicable.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²May include revised data.

³Includes welding and alloy hard-facing rods and materials, wear- and corrosion-resistant alloys, and aluminum, copper, magnetic, nickel, and other alloys.

TABLE 3
U.S. GOVERNMENT STOCKPILE INVENTORY OF CHROMIUM MATERIALS^{1, 2}

(Metric tons)

Period	Chromite ore		Chromium ferroalloys		Chromium metal
	Chemical	Refractory	High-carbon ferro-chromium	Low-carbon ferro-chromium	
2002:					
July	78,300	175,000	372,000	163,000	7,210
August	78,300	113,000	547,000 ³	235,000 ³	7,220 ³
September	78,300	113,000	544,000	234,000	7,220
October	78,300	127,000 ³	536,000	233,000	7,220
November	78,300	127,000	535,000	232,000	7,220
December	78,300	126,000	531,000	232,000	7,220
2003:					
January	78,300	126,000	527,000	231,000	7,220
February	78,300	126,000	521,000	229,000	7,220
March	78,300	98,000	517,000	228,000	7,210
April	78,300	98,000	505,000	228,000	7,210
May	78,300	98,000	501,000	227,000	7,160
June	71,500	83,700	497,000	226,000	7,160
July	71,500	82,100	484,000	220,000	7,150

¹Data are rounded to no more than three significant digits.

²These Government stocks are reported by the Defense National Stockpile Center in Inventory of Stockpile Materials R-1, which reports uncommitted inventory. Uncommitted inventory is that inventory for which there is no sales contract. Committed inventory is that inventory for which there is a sales contract; however, the material has not yet been shipped. For chromium materials, the R-1 report includes chromium materials that (1) meet specifications and are held in excess of goal and (2) do not meet specifications and are held in excess of goal. The R-1 report excludes chromium materials that are committed and awaiting shipment.

³The increase resulted from the reclassification of physical inventory from committed to uncommitted. It does not result from the addition of chromium materials to the stockpile.

Source: Defense National Stockpile Center.

TABLE 4
U.S. EXPORTS OF CHROMITE ORE, CHROMIUM FERROALLOYS, AND METAL¹

Period	Chromite ore		Chromium ferroalloys ²			Chromium metal ³	
	Gross weight (metric tons)	Value (thousands)	Gross weight (metric tons)	Chromium content (metric tons)	Value (thousands)	Gross weight (metric tons)	Value (thousands)
2002:							
June	17,200	\$824	456	261	\$416	55	\$595
July	335	89	394	240	369	47	525
August	345	61	771	469	577	68	652
September	458	171	664	394	589	45 ^r	651
October	2,490	842	9,880	6,460	4,650	72	625
November	456	122	520	307	462	69	671
December	415	93	296	178	288	71	597
January-December	24,300	4,070	15,900	10,100	10,100	745	7,450
2003:							
January	747	280	483	290	472	73 ^r	508 ^r
February	442	159	196	111	230	47	499
March	596	166	352	217	445	89	589
April	1,900	209	390	230	439	64	877
May	444	124	317	190	276	72	912 ^r
June	1,030	204	756	443	653	46	579
January-June	5,160	1,140	2,500	1,480	2,510	391	3,960

^rRevised.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes low-, medium-, and high-carbon ferrochromium and ferrochromium silicon.

³Includes chromium metal waste and scrap and unwrought powders.

Source: U.S. Census Bureau.

TABLE 5
U.S. IMPORTS FOR CONSUMPTION OF CHROMITE ORE, FERROCHROMIUM, AND CHROMIUM METAL¹

(Metric tons)

	2002 January- December ²	2003		
		May	June	January- June ²
Chromite ore:				
Not more than 40% chromic oxide:				
Gross weight	1,080	--	--	77
Chromic oxide content	301	--	--	24
More than 40% but less than 46% chromic oxide:				
Gross weight	10,600	186	24	592
Chromic oxide content	4,470	NA	11	NA
46% or more chromic oxide:				
Gross weight	100,000	3,720	5,220	70,400
Chromic oxide content	46,700	NA	2,410	NA
Total, all grades:				
Gross weight	112,000	3,900	5,240	71,000
Chromic oxide content	51,500	NA	2,420	NA
Ferrochromium:				
Low-carbon: ³				
Not more than 0.5%:				
Gross weight	25,600	1,790	1,760	10,700
Chromium content	17,000	1,250	1,220	7,400
More than 0.5% but not more than 3%:				
Gross weight	8,040	240	56	2,430
Chromium content	4,960	148	36	1,450
Total, low-carbon:				
Gross weight	33,600	2,030	1,820	13,100
Chromium content	21,900	1,390	1,260	8,850
High-carbon: ⁴				
Gross weight	283,000	10,200	32,700	193,000
Chromium content	169,000	7,140	19,400	112,000
Total, all grades:				
Gross weight	316,000	12,300	34,500	206,000
Chromium content	191,000	8,540	20,700	120,000
Chromium metal:				
Unwrought powders	766	302	82	1,100
Waste and scrap	83 ^r	100	1	243
Other than waste and scrap and unwrought powders	6,570	797	595	3,390
Total, all grades	7,430	1,200	677	4,730

^rRevised. NA Not available. -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²May include revised data.

³Ferrochromium containing not more than 3% carbon.

⁴Ferrochromium containing more than 4% carbon.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF CHROMITE ORE IN 2003, BY GRADE AND BY COUNTRY¹

Grade and country	June			January-June ²		
	Gross weight (metric tons)	Cr ₂ O ₃ (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Cr ₂ O ₃ (metric tons)	Value ³ (thousands)
Not more than 40% chromic oxide, South Africa	--	--	--	77	24	\$30
More than 40% but less than 46% chromic oxide, South Africa	24	11	\$4	592	NA	88
46% or more chromic oxide, South Africa	5,220	2,410	385	70,400	NA	4,580
Total	5,240	2,420	389	71,000	NA	4,700

NA Not available. -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²May include revised data.

³Customs import value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

Source: U.S. Census Bureau.

TABLE 7
U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2003, BY GRADE AND BY COUNTRY¹

Grade and country	June			January-June ²		
	Gross weight (metric tons)	Chromium content (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Chromium content (metric tons)	Value ³ (thousands)
High-carbon ferrochromium:⁴						
China	--	--	--	20	14	\$25
Kazakhstan	12,600	8,540	\$8,640	68,600	47,200	37,200
Russia	761	522	663	910	667	747
South Africa	12,900	6,490	5,070	100,000	49,800	31,000
Zimbabwe	6,480	3,880	2,860	22,900	13,900	8,920
Total	32,700	19,400	17,200	193,000	112,000	77,900
Low-carbon ferrochromium:⁵						
More than 0.5% but not more than 3% carbon:						
Kazakhstan	--	--	--	500	345	418
Russia	--	--	--	11	5	12
South Africa	56	36	64	1,920	1,100	1,020
Total	56	36	64	2,430	1,450	1,450
Not more than 0.5% carbon:						
China	22	15	28	62	42	77
Germany	158	112	320	1,730	1,220	3,260
Japan	117	82	243	912	631	1,880
Kazakhstan	650	442	538	1,310	911	1,130
Russia	780	545	826	6,490	4,460	6,160
South Africa	16	11	32	56	36	63
Turkey	20	13	36	140	94	206
Total	1,760	1,220	2,020	10,700	7,400	12,800
All grades:						
China	22	15	28	82	54	102
Germany	158	112	320	1,730	1,220	3,260
Japan	117	82	243	912	631	1,880
Kazakhstan	13,200	8,980	9,180	70,500	48,500	38,800
Russia	1,540	1,070	1,490	7,410	5,130	6,920
South Africa	13,000	6,540	5,160	102,000	50,900	32,100
Turkey	20	13	36	140	94	206
Zimbabwe	6,480	3,880	2,860	22,900	13,900	8,920
Total	34,500	20,700	19,300	206,000	120,000	92,100

-- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²May included revised data.

³Customs import value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

⁴Ferrochromium containing more than 4% carbon.

⁵Ferrochromium containing not more than 3% carbon.

Source: U.S. Census Bureau.

TABLE 8
U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2003, BY GRADE AND BY COUNTRY¹

Grade and country	June		January-June ²	
	Gross weight (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Value ³ (thousands)
Unwrought powders:⁴				
China	20	\$67	43	\$160
France	1	8	1	8
Germany	4	2	7	81
Japan	--	--	100	994
Kazakhstan	--	--	74	229
Russia	--	--	383	2,960
United Kingdom	60	297	496	2,360
Total	82	374	1,100	6,790
Waste and scrap:				
Germany	--	--	9	166
Japan	--	--	22	152
Korea, Republic of	1	7	4	22
Malaysia	--	--	1	3
Russia	--	--	200	713
Singapore	--	--	1	5
United Kingdom	--	--	5	61
Total	1	7	243	1,120
Other than waste and scrap and unwrought powders:				
Austria	--	--	(5)	3
Belgium	--	--	18	110
China	182	622	770	2,700
Finland	--	--	(5)	7
France	109	756	746	5,530
Germany	21	86	72	372
India	--	--	(5)	2
Italy	--	--	(5)	3
Kazakhstan	--	--	257	830
Russia	140	483	662	2,300
Singapore	--	--	(5)	11
Spain	17	69	22	87
Switzerland	(5)	10	(5)	28
Taiwan	--	--	(5)	4
United Kingdom	125	776	840	5,230
Total	595	2,800	3,390	17,200
All grades:				
Austria	--	--	(5)	3
Belgium	--	--	18	110
China	202	689	812	2,860
Finland	--	--	(5)	7
France	110	764	747	5,540
Germany	22	88	88	619
India	--	--	(5)	2
Italy	--	--	(5)	3
Japan	--	--	122	1,150
Kazakhstan	--	--	331	1,060
Korea, Republic of	1	7	4	22
Malaysia	--	--	1	3
Russia	140	483	1,240	5,970
Singapore	--	--	1	16
Spain	17	69	22	87
Switzerland	(5)	10	(5)	28
Taiwan	--	--	(5)	4
United Kingdom	185	1,070	1,340	7,640
Total	677	3,180	4,730	25,100

-- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²May include revised data.

³Customs import value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

⁴Separate category reported starting May 2003.

⁵Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 9
U.S. TRADE OF STAINLESS STEEL, BY PRODUCT, IN 2003¹

Stainless steel product	June		January-June	
	Gross weight (metric tons)	Value ² (thousands)	Gross weight (metric tons)	Value ² (thousands)
Exports:				
Ingot	298	\$1,520	2,310	\$16,900
Flat-rolled (width > 600 mm)	14,100	28,100	85,900	165,000
Flat-rolled (width < 600 mm)	8,370	20,500	47,800	115,000
Bars and rods in irregular coils	193	848	1,080	3,270
Other bars and rods	1,400	8,420	8,670	45,500
Wire	637	4,090	4,340	26,600
Tubes, pipes, hollow profiles	2,760	10,800	15,800	67,900
Total	27,700	74,200	166,000	440,000
Stainless steel scrap	30,700	26,700	278,000	173,000
Grand total	58,500	101,000	443,000	613,000
Imports:				
Ingot	21,600	29,800	90,300	125,000
Flat-rolled (width > 600 mm)	17,200	30,900	121,000	198,000
Flat-rolled (width < 600 mm)	3,020	8,990	20,300	59,300
Bars and rods in irregular coils	2,590	4,160	19,100	30,700
Other bars and rods	4,880	10,800	31,700	70,500
Wire	2,480	8,090	16,000	48,500
Tubes, pipes, hollow profiles	5,060	18,900	30,600	120,000
Total	56,900	112,000	329,000	652,000
Stainless steel scrap	5,440	2,970	35,000	22,900
Grand total	62,300	115,000	364,000	675,000

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Export value is free alongside ship (f.a.s.). Import value is Customs import value, which generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

Source: U.S. Census Bureau.